

Minimal Incision Face-Lifting

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Facial Plast Surg 2012;28:76–88.

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Abstract

Keywords

- ▶ face-lift
- ▶ mini-lift
- ▶ rhytidectomy
- ▶ minimal incision
- ▶ neck rejuvenation

Rhytidectomy has been performed for over 100 years, but only more recently has it become generally accepted by society. Recent improvements in access to information has produced more public awareness of the possible aesthetic enhancements. Additionally, there has been a trend for the younger patient to seek cosmetic surgery, often requesting procedures with minimal incisions and less downtime. The mini-lift, with its decreased operating time and expense, rapid recovery, as well as more limited incisions and tissue elevation, is an ideal procedure for patients with a smaller degree of cheek and neck laxity. We describe our concept of the mini-lift and address what results can be expected.

History of Face-Lift Surgery

The history of face-lift surgery dates back to the early 1900s, when these procedures were often looked down upon and the surgeons who developed the face-lift techniques were often reluctant to publish them. In addition, the surgeons who performed these procedures were hesitant to share their techniques with competitors as they were reportedly earning the lion's share of their income through them.¹ As a result, the early literature is sparse. In recent decades, a multitude of techniques have been well documented to provide steady and consistent outcomes.

The early techniques consisted of interrupted, small excisions of skin around the hairline and in front of the ear. The skin was sutured without performing any undermining. As techniques evolved, greater areas of skin were excised and separate incisions coalesced into a single line stretching from above the patient's ear, around the ear lobe and behind the ear.¹ Because of the innate reduction in skin elasticity, these types of skin-only face-lifts had short lasting effects. In 1919, the subcutaneous rhytidectomy that involved extensive undermining and lipectomy was described separately by Bourguet² and Bettman.³ In 1928, Joseph⁴ introduced the post-tragal placement of the previously described vertical preauricular incision.

Aufricht advocated suturing deep to the superficial fat to improve and prolong the results of the lift in 1960.⁵ In 1968, Skoog set the stage for a new approach when he described the subfascial face-lift.⁶ Then, Mitz and Peyronie described the

superficial musculoaponeurotic system (SMAS), in their seminal paper of 1976⁷ initiating the era of the SMAS face-lift. Fibrous adhesions to the overlying subcutaneous fat and skin allow for manipulation of the SMAS to effect changes on the skin. Initially, surgeons did not retain the attachments between the SMAS and the overlying skin; therefore, they used separate and distinct traction on the SMAS to improve the lift by allowing the SMAS to bear greater wound tension. The 1990s saw the development of the deep-plane and composite rhytidectomies as described by Hamra^{8,9} and others^{10,11} that were intended to improve midface ptosis and deep nasolabial folds.

The trend switched to less invasive procedures as surgeons recognized that bigger operations did not necessarily mean better results, especially in view of the increase in complication rates associated with deep plane or sub-SMAS dissections.^{12,13} In the late 1990s, Baker and Saylan described the lateral SMASectomy and the S-lift as less invasive alternatives to rhytidectomy. These procedures provided excellent results.^{14,15} The minimal access cranial suspension lift, described in 2001, popularized the mini-lift with suspension sutures.¹⁶

As the acceptance of cosmetic surgery has increased and access to information has improved, more patients have sought to avoid the stigmata of poorly designed or overoperated results. Because some patients interpret, rightly or wrongly, that more extensive surgery means more downtime and more of the negative stigma, there has been an increasing trend to perform minimally invasive procedures. In addition, with the general acceptance of cosmetic surgery by our

culture, there has been a trend for a younger patient base to seek cosmetic surgery. These younger patients are usually more likely to benefit from minimally invasive procedures than those with more extensive aging.

Mini-Lift

The less invasive, more limited form of rhytidectomy has many names, including the "short flap technique," the "S-lift," the "lunchtime" lift, the "weekend" lift, and the "mini-lift."¹⁷ These names may have different meanings to each surgeon performing a limited rhytidectomy, but overall they refer to a lift with a limited preauricular incision terminating just posterior to the lobule. The extent of skin undermining and plication or imbrication of SMAS is determined by the individual technique employed by the surgeon. We describe our concept of the mini-lift and address what type of results can be expected.

The limited nature of the mini-lift by definition provides more limited results than the traditional rhytidectomy. It is usually recommended for younger patients with a smaller degree of cheek and neck laxity. The advantages of the mini-lift technique include decreased operating time and expense, rapid recovery, elimination of mastoid and occipital scars, while permitting the addition of other less invasive techniques to address submental and neck laxity. Even though there is less tissue trauma from a reduction in undermining, the technique still provides excellent cheek and jowl elevation. It is limited in its ability to provide intraoperative exposure of the posterior edge of platysma and to remove excessive neck skin. Another shortcoming of this procedure is potential temporary postauricular skin bunching. Just as with the traditional SMAS rhytidectomy, the mini-lift does not address the midface and melolabial fold as well as it addresses the jowl area.

Concomitant skin resurfacing is possible with the mini-lift, similar to that of a traditional rhytidectomy. Less aggressive resurfacing procedures, such as a medium depth chemical peel, over the area of the flap are preferred to minimize that chance of flap necrosis. Nitrogen plasma skin regeneration has also been shown to be safe to use over undermined tissue with no increase in surgical complications.¹⁸

Methods

Patient Selection

Successful outcome depends on appropriate procedure selection for the rhytidectomy patient. The ideal rhytidectomy candidate is thin skinned, with minimal amount of subcutaneous adipose tissue and a maximal amount of skin elasticity of the jowl and neck. This patient should also be in good health to tolerate an elective procedure. There are certain characteristics that make some patients better candidates for the mini-lift. Although there are no absolute indications for a mini-lift, in our opinion the ideal candidate is a younger patient with mild to moderate cheek and neck laxity. These men or women are often under 55 years of age. On physical exam, there is less than 55 mm of submental excess skin.

These two criteria make the rule of thumb of "limit of 55": under 55 years old and with less than 55 mm of submental excess skin. Certainly, a mini-lift can be performed on those outside these guidelines. However, a patient who exhibits excessive laxity in the neck may not obtain adequate results with the mini-lift alone.

Surgical Technique

Preoperative Events

During the initial evaluation, patients undergo a thorough history and physical examination. Medical clearance is obtained from the patient's primary care physician, and a preoperative medical evaluation consisting of a laboratory profile (complete blood count with differential, basic metabolic panel, hepatic function panel, coagulation studies [prothrombin time/partial thromboplastin time] and HIV status) and an electrocardiogram is obtained. Patients are also further evaluated for their risk for bleeding complications, by questioning for history of easy bruising, frequent epistaxis, and anticoagulant use. Systemic diseases that may complicate healing, such as diabetes, as well as use of tobacco, are also identified.

Two weeks prior to surgery, the patient is instructed to stop any medications that have anticoagulant properties, including aspirin, nonsteroidal anti-inflammatory drugs, warfarin, as well as herbal supplements such as vitamin E, ginseng, garlic, ginkgo, St. John's wort and fish oil. Smokers are also advised to refrain from smoking for 2 weeks prior to surgery to reduce their risk of skin flap necrosis.

The day of surgery, the patient's medical history is reviewed and brief focused exam is performed. The patient washes his or her face and hair with antiseptic soap. The mini-lift incision is marked and the hair is braided into ponytails. No hair is shaved.

The mini-lift incision must adhere to the general principles of rhytidectomy incisions (—Fig. 1). It is planned in such a way as to enable camouflage and to maintain a natural hairline. Because the vector of pull is slightly more vertical than in a traditional rhytidectomy, the incision may be more appropriately located in front of the sideburn. However, the preauricular tuft of hair and sideburn must be maintained. If the patient's preauricular sideburn extends 1 to 2 cm below the insertion of the helical root, the incision may be planned to curve up into the temporal hair. This allows some posterior superior lifting of the hairline. If the sideburn is naturally found at the helical insertion, an inferior sideburn incision is required. A separate temporal incision is planned if there is a need to treat skin laxity in this area.

The preauricular incision is marked following the natural curves of the auricle, with a retro-tragal course in women and a pretragal course in men to prevent hair-bearing skin from moving to the tragus (—Figs. 2, 3a, 3b). The postauricular limb of the face-lift incision is best placed on the posterior surface of the ear to allow for its postoperative tendency to migrate posteriorly and inferiorly (—Fig. 3c). The occipital extension of the postauricular incision can often be completely avoided

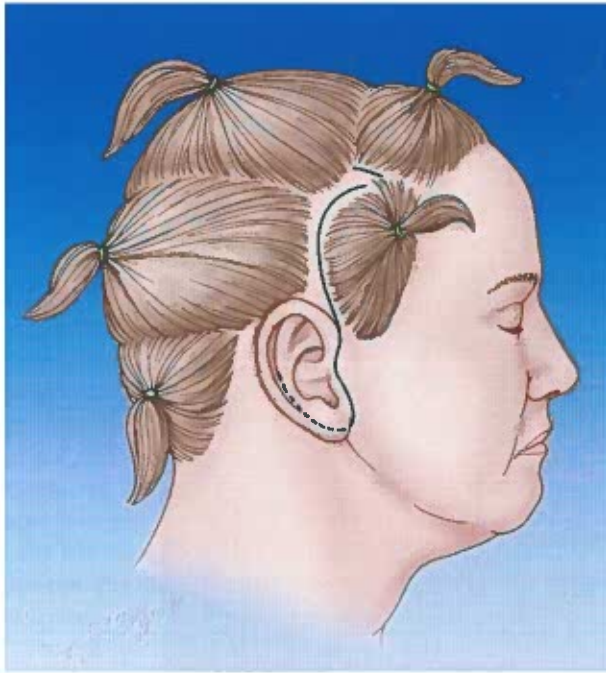


Figure 1 The mini-lift incision is a standard rhytidectomy incision that terminates on the postauricular area at the level of the external auditory canal. There is no extension into the occipital scalp. The vector of pull is more superior than the standard rhytidectomy procedure.

in the mini-lift by stopping the postauricular incision at the level of an imaginary line drawn through the superior aspect of the external auditory canal.

To address platysmal diastasis and excessive subplatysmal fat, a submental incision is also marked to allow for submental liposuction or lipectomy (→ Fig. 3d).

Anesthesia

The mini-lift can be performed with local anesthesia with intravenous sedation. Usually, patients are given a preoperative sedative 30 minutes prior to injection of local anesthesia. Typically, this entails 10 to 20 mg of oral diazepam depending on the patient's habitus and experience with benzodiazepines. Midazolam is administered and a propofol drip is started. Once the patient is adequately sedated, local anesthesia is infiltrated. Approximately 10 mL of 1% lidocaine with 1:100,000 epinephrine is injected into the proposed incision sites using a 27-gauge needle; then 30 mL of 0.5% lidocaine and 0.25% marcaine mixture with 1:100,000 epinephrine is injected in a fanlike manner to the areas to be undermined.

Operative Technique

Once adequate sedation and local anesthesia are achieved, the patient's face is cleaned with diluted povidone-iodine and sterilely draped. A 10-minute delay allows the epinephrine to produce maximal vasoconstriction. A No. 15 blade is used to make three 1-cm incisions, involving the postauricular sulci and submental crease to gain access for the liposuction cannula (→ Fig. 4). The 4-mm-spatulated liposuction cannula is used without suction to create multiple tunnels in an overlapping, crisscrossing fashion from these three points over the jowls and submental areas. Suction is applied, and closed suction-assisted lipectomy is performed over these areas.

From the submental incision, an inferiorly based skin flap is raised with blunt and sharp dissection. Excess adipose tissue and midline platysma muscle is carefully excised. Additional open liposuction is performed in the submental area for further refinement. A bilateral wedge of platysma may be excised inferior to the hyoid to treat platysmal

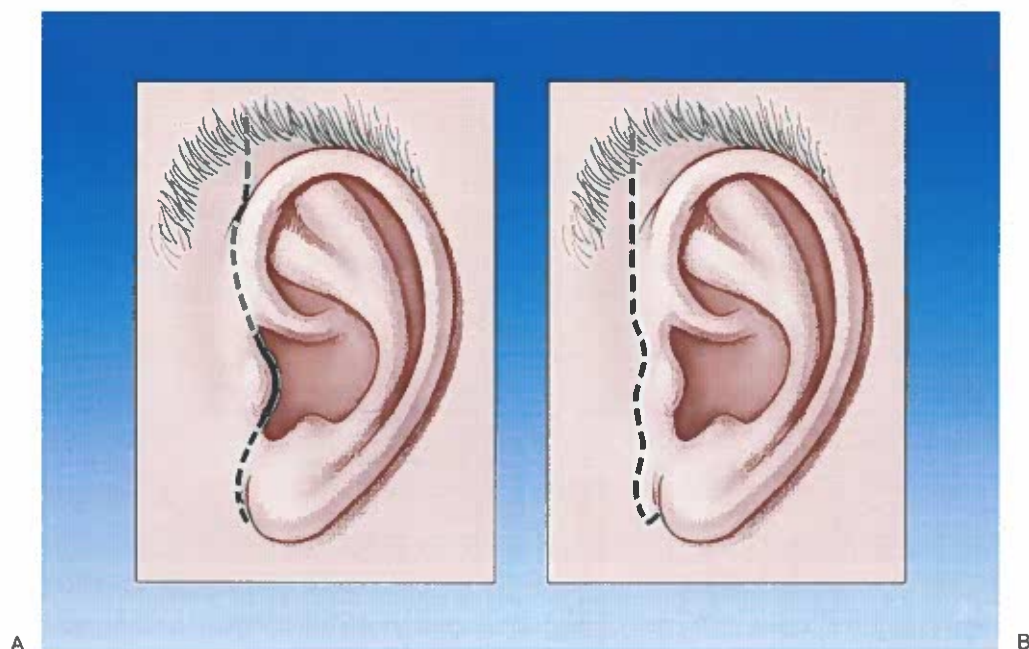


Figure 2 The preauricular incision is carried (a) post-tragal in females and is kept (b) pre-tragal in males to prevent hair from growing on the tragus.

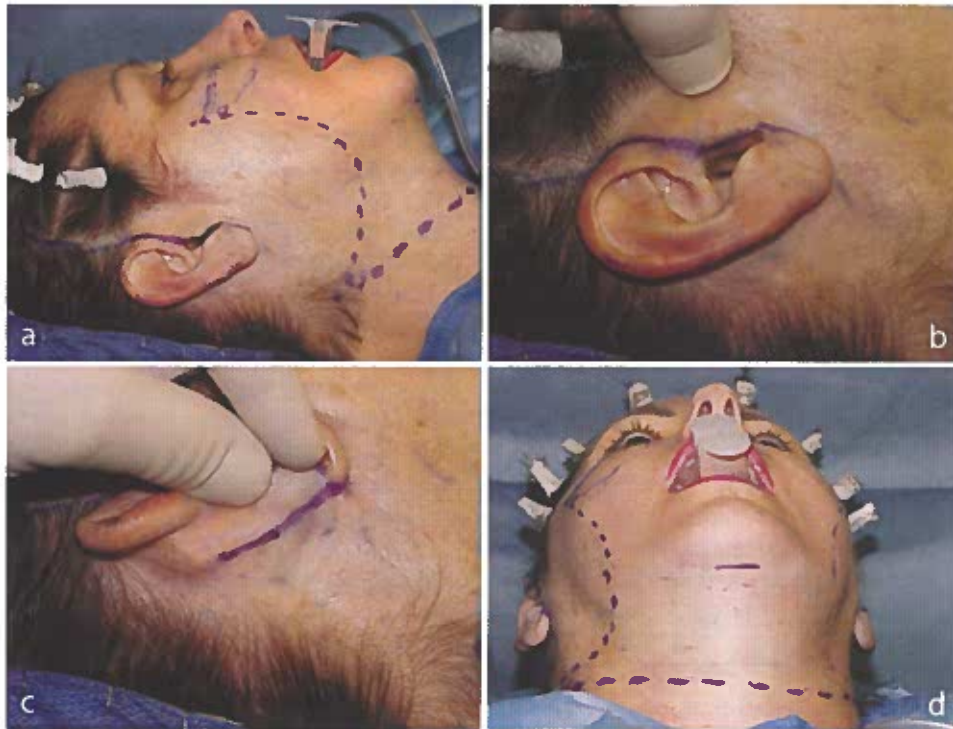


Figure 3 (a) Preoperative markings show the extent of dissection (broken line) ~4 to 5 cm anteriorly and inferiorly from the origin of the temporal and postauricular incisions. (b) A post-tragal incision is designed for female patients. (c) Postauricular incision terminates at the level of the external auditory canal. There is no extension into the occipital scalp. (d) A 1-cm submental incision is marked to allow for submental liposuction or lipectomy.

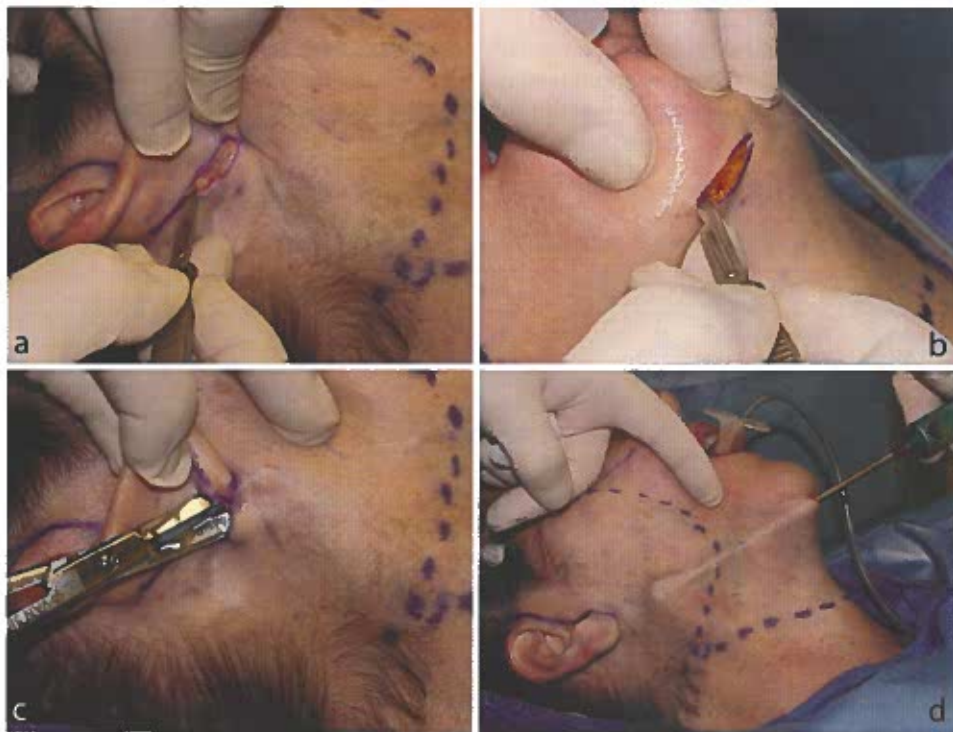


Figure 4 (a, b) A No. 15 blade is used to make three 1-cm incisions, involving the postauricular sulci and submental crease. (c) Face-lift scissors are used to gain access for the liposuction cannula. (d) The 4-mm spatulated liposuction cannula is used without suction to create multiple tunnels in an overlapping, crisscrossing fashion from these three points over the jowls and submental areas.

banding. The platysma may also be approximated in the midline with 2-0 Ethibond suture on a V-7 needle (Ethicon, Somerville, NJ) to provide further support to this area. Hemostasis is obtained with bipolar cautery. A 5-0 plain catgut running suture is used for the skin closure.

The temporal hairline incision is created through the dermis and is beveled parallel to the hair follicles to avoid incisional alopecia (→Fig. 5). Avoiding electrocautery of hair follicles further preserves hair-bearing skin. The plane of dissection in the hair-bearing areas is kept deep to the roots of the hair follicles and superficial to the glistening white surface of the deep temporal fascia until the anterior margin of the hairline is encountered, at which time the dissection is brought more superficially to avoid the nerves and vessels in this area. Inferior to the hairline margin, at the zygoma, the dissection is brought more superficially in to the subcutaneous plane to minimize injury to the temporal branch of the facial nerve. The tissue bridge between the deep and superficial areas of dissection is cauterized and cut.

The preauricular incision is carried into the natural crease superior to the tragus, curved posterior to the tragus in females, or brought anterior to the tragus in males, then it is brought out inferiorly in the natural crease between the lobule and the preauricular skin and carried around the earlobe (→Fig. 6). Posteriorly, it is carried into the sulcus

and onto the posterior aspect of the auricle to a level approximately at the superior border of the external auditory canal.

The facial flaps are elevated with blunt and sharp dissection in a subdermal plane with enough subcutaneous tissue left on the flap to ensure adequate circulation (→Fig. 7). Care is taken to direct the plane of dissection superficial to the SMAS. The dissection is carried in a radial fashion from the ear for ~4 to 5 cm extending anteriorly and inferiorly from the origin of the temporal and postauricular incisions. The length of anterior flap elevation should be such as to allow adequate redraping while simultaneously maintaining a healthy connection with the underlying SMAS in the central face. Excessive anterior dissection contributes to postoperative swelling and morbidity. Extensive dissection over the zygomatic eminence is avoided to prevent injury to the zygomatic branch of the facial nerve.

Dissection is performed by developing subdermal tunnels ~1 to 2 cm apart and connecting these tunnels with a combined cutting-pushing motion with the dissection scissors. The surgical assistant stretches and tightens the skin to provide countertraction. When the areas of dissection are connected, careful hemostasis is obtained and all areas are inspected. At no point are muscle fibers, major vessels, or motor nerve fibers or major neural structures encountered during the dissection. Care must be taken to maintain the

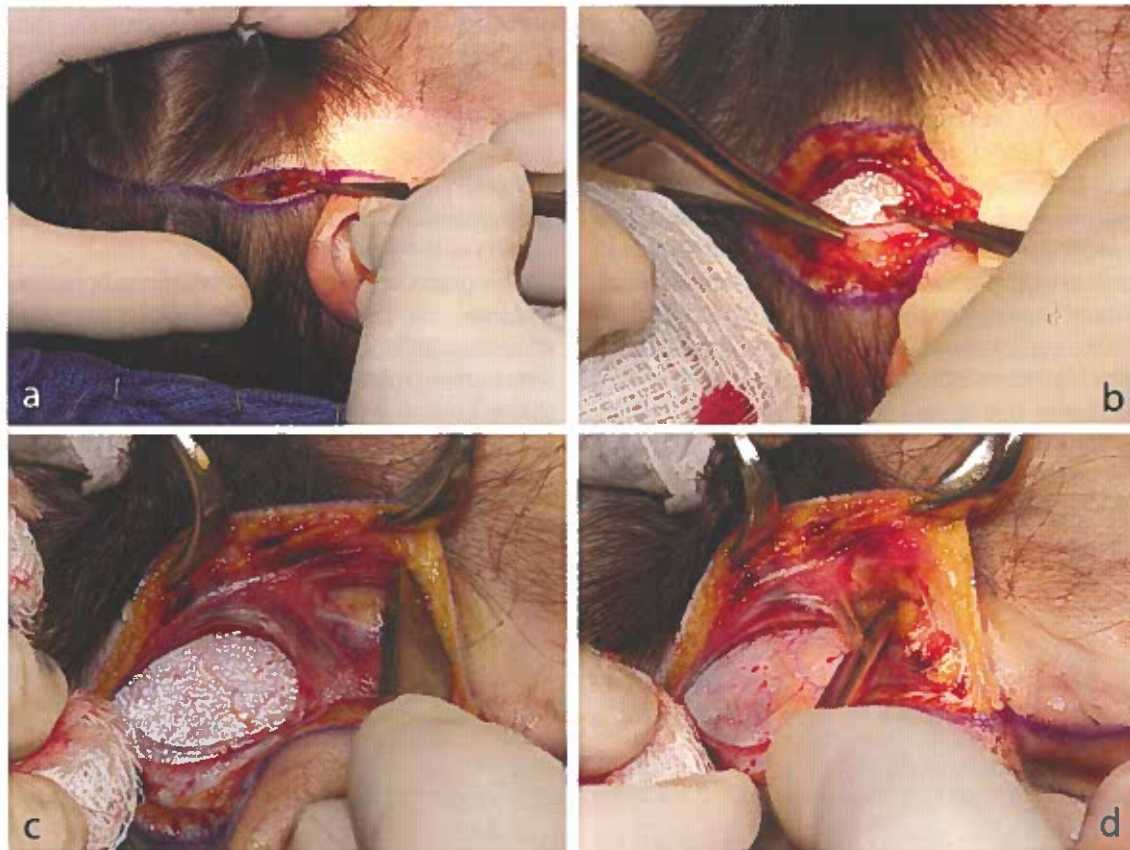


Figure 5 (a) The temporal hairline incision is created through the dermis and is beveled parallel to the hair follicles to avoid incisional alopecia. (b) The plane of dissection in the hair-bearing areas is kept deep to the roots of the hair follicles and superficial to the deep temporal fascia (arrow). (c) Inferior to the hairline margin, at the zygoma, the dissection is brought more superficially. (d) The tissue bridge between the deep and superficial areas of dissection is cauterized and cut.

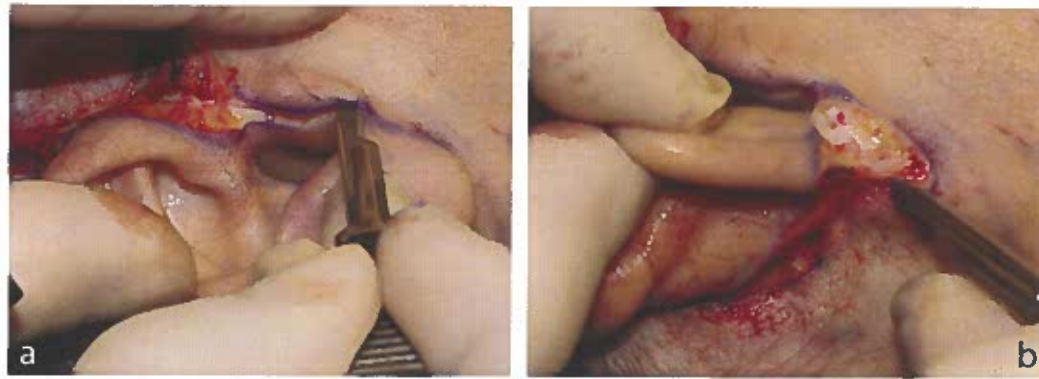


Figure 6 (a) The preauricular incision is carried into the natural crease superior to the tragus, curved posterior to the tragus in females, brought out inferiorly in the natural crease between the lobule and the preauricular skin, and carried around the earlobe. (b) Posteriorly, it is carried into the sulcus and onto the posterior aspect of the auricle to a level approximately at the superior border of the external auditory canal.

correct surgical plane to avoid violating the fascia over the sternocleidomastoid muscle, which puts the great auricular nerve at risk.

With careful skin dissection, the SMAS is identified in the preauricular area. A lighted retractor is placed beneath the skin flap to expose and illuminate the surface of the SMAS. Using face-lift scissors, a strip of SMAS is excised in the preauricular area extending from anterior to the tragus to below the lobule (→ Fig. 8). Following this, a 1- to 2-cm SMAS flap is elevated off the anterior parotid capsule. Care is taken to avoid entering the parotid capsule to minimize potential injury to the facial nerve. The SMAS is then suspended superiorly and posteriorly. Imbrication of the SMAS is performed with several interrupted sutures of 2-0 Ethibond on a V-7 needle (Ethicon) in a superolateral vector. The first suture is placed at the infratragal region to the angle of mandible, making sure that there is no distortion of the position of the external ear with this suture. Subsequent sutures are placed in the preauricular and postauricular areas as indicated to obtain the desired aesthetic result. The sutures are placed in a buried fashion to decrease the chance of extrusion. Excess SMAS and adipose tissue are excised to prevent bulkiness and unevenness. Meticulous hemostasis is obtained with bipolar cautery. The area is irrigated and again inspected for any bleeding points.

The skin is advanced posteriorly and superiorly, and skin closure is accomplished in a tension-free fashion to prevent scar widening (→ Fig. 9). A key point of suspension is at the superior aspect of the preauricular incision. Tacking staples are placed in the pre- and postauricular areas to allow precise excision of the overlapping skin. If a post-tragal incision was used, then excess skin in the preauricular area is contoured to form a tragus. The hair-bearing areas are closed with stainless steel auto suture staples. The preauricular skin is approximated at the tragus and lobule with deep 5-0 PDSII (polydioxanone) suture on a P-3 needle (Ethicon). The postauricular and preauricular incisions are closed with continuous 5-0 plain catgut. Care is taken to prevent a pixie ear deformity by suspending the lobule slightly superiorly. A 5-0 Prolene on a P-3 needle (Ethicon) is used in a horizontal mattress fashion to suspend the lowest portion of the earlobe. A 1-cm Penrose drain is placed through the postauricular incision and advanced to the anterior, most dependent portion of the subcutaneous pocket.

This procedure is then repeated on the opposite side.

At the end of the procedure, all flaps are inspected for adequate capillary filling and for any evidence of hematoma formation. Xeroform gauze (Covidien, Mansfield, MA) in a V shape is placed over the pre- and postauricular incision sites. Folded gauze squares are applied over all dissected areas and



Figure 7 (a) The facial flaps are elevated with blunt and sharp dissection in a subdermal plane with enough subcutaneous tissue left on the flap to ensure adequate circulation. (b) The dissection is carried in a radial fashion from the ear for ~4 to 5 cm extending anteriorly and inferiorly from the origin of the temporal and postauricular incisions to allow adequate redraping.

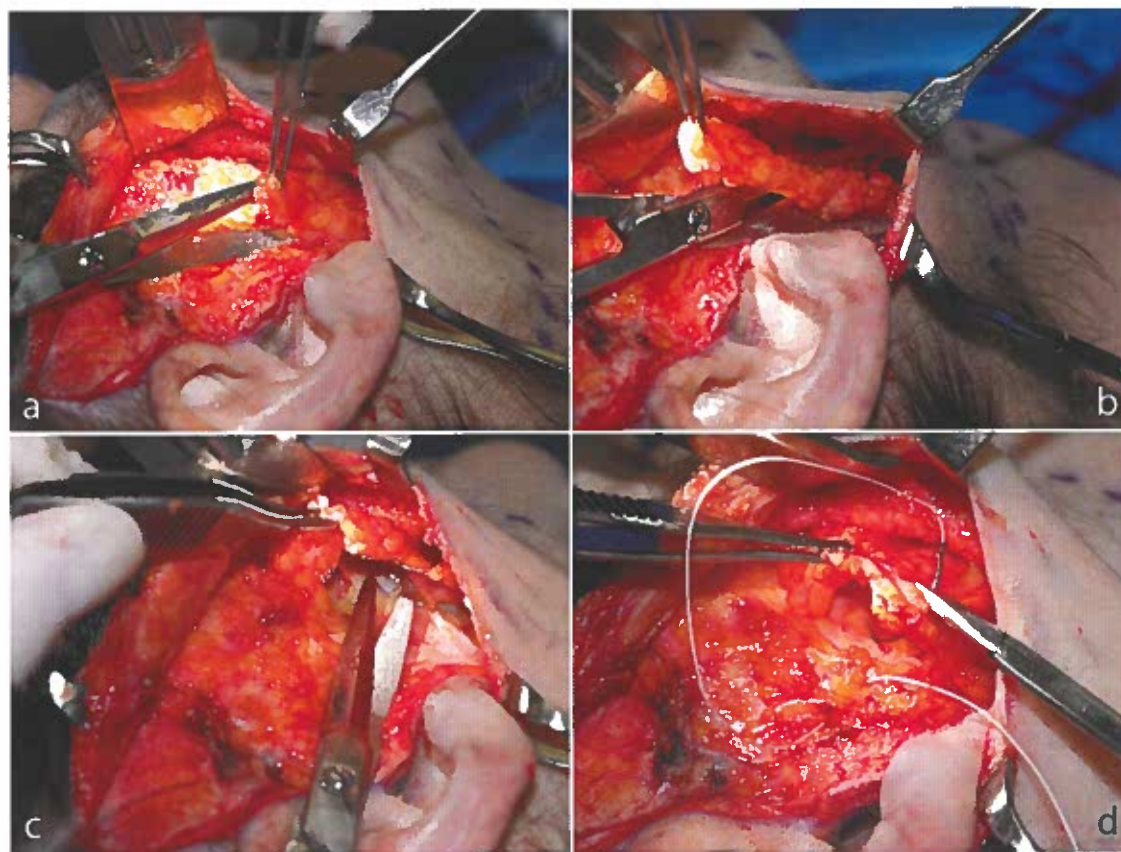


Figure 8 (a) Superficial musculoaponeurotic system (SMAS) is grasped with Adson-Brown forceps. (b) Face-lift scissors are used to remove a strip of SMAS in the preauricular area extending from anterior to the tragus to below the lobule. (c) A 1- to 2-cm SMAS flap is elevated off the anterior parotid capsule. (d) Imbrication of the SMAS is performed with several buried interrupted sutures of 2-0 Ethibond (Ethicon, Somerville, NJ) in a superolateral vector.

secured with a circumferential dressing consisting of Kerlex (Covidien, Mansfield, MA) and Coban (3M, Maplewood, MN).

Postoperative Care

Postoperatively, the head is kept elevated at 30 degrees, and the patient is closely observed for any signs of hematoma formation. After recovery, the patient is discharged to home and is instructed to maintain head elevation. A 2-day course of an oral antibiotic, such as a first-generation cephalosporin, and a 7-day prednisone taper are prescribed. The patient is evaluated again in the office on the first postoperative day. At this time, the circumferential dressing and the drains are removed. The patient is again dressed with gauze in the periauricular area, to allow collection of any persistent drainage from the drain site. The patient is instructed to remove this dressing 4 hours after leaving the first postoperative office visit. At this time, the patient may shower, with water only. The patient may use baby shampoo on postoperative day 3. The patient is given an ACE wrap or a preformed face-lift dressing to wear when not in the shower. This dressing is intended to prevent the patient from moving the head from side to side and to decrease neck swelling. The patient is instructed not to drive for 10 days, to prevent head rotation. Physical activity should be limited and the patient should abstain from using aspirin, nonsteroidal anti-inflammatory

drugs, or herbal supplements for at least a week following surgery. Smokers are again strongly urged to refrain from smoking for 2 weeks after surgery. Postoperative wound care consists of cleaning the incisions with hydrogen peroxide four to six times a day and applying an antibiotic ointment after each cleaning. The hair-bearing areas are cleansed with witch hazel to prevent peroxide-induced hair discoloration.

The patient is seen again 1 week after surgery when all staples are removed. The sutures are also all removed except for the lower ear lobe Prolene suture. This is kept in place for another week to prevent earlobe dehiscence due to trauma from shirt removal. Alternatively, a deep suture can be placed at time of surgery to secure the lobule; however, we have found that this technique can cause more asymmetries in lobule shape and position.

Complications

The complications associated with the mini-lift are similar to those associated with a standard rhytidectomy.

Hematoma

Hematoma is the most common complication associated with rhytidectomy. It is noted to occur in 2 to 15% of patients.^{19,20} It is associated with increased blood pressure, postoperative

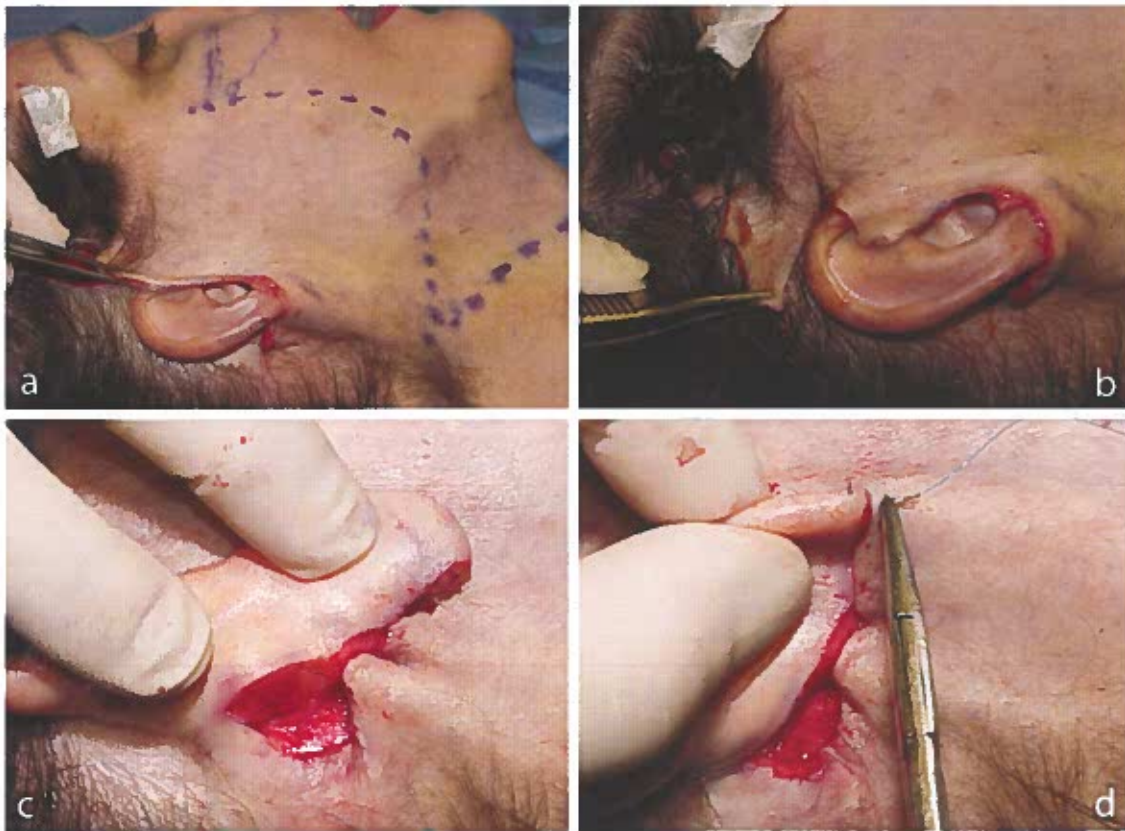


Figure 9 (a) The skin is advanced posteriorly and superiorly, and skin closure is accomplished in a tension-free fashion to prevent scar widening. (b) A key point of suspension is at the superior aspect of the preauricular incision. Tacking staple is placed to allow precise excision of the overlapping skin. (c) The excess postauricular skin is approximated by the rule of halves with deep 5-0 polydioxanone (PDS) suture. (d) A 5-0 Prolene is used in a horizontal mattress fashion to suspend the lowest portion of the lobule slightly superiorly to prevent a pixie ear deformity.

nausea and vomiting, and anxiety. Obviously, medications containing aspirin or nonsteroidal anti-inflammatory drugs, high doses of vitamin E, ginkgo biloba, garlic, ginseng, and ginger may increase bleeding during and after surgery. Male patients are more prone to sustain hematomas. Ehlers-Danlos syndrome may also be a predisposing factor associated with hematoma formation.²¹

Typically, hematoma presents with constant, unilateral pain. These symptoms need to be quickly evaluated. The best treatment for hematoma is prevention through meticulous hemostasis at the time of surgery. In our experience, patients have done better with well-placed drains and post-surgical compression dressings. Other surgeons recommend the use of fibrin sealants.

Most hematomas are minor and can be treated with aspiration using an 18-gauge needle or expressed out through an incision line. Less than 4% of hematomas are considered to be major, and these would require surgical intervention. Prompt clot evacuation, irrigation, exploration, and cautery of suspicious bleeding vessels are necessary. A drain and a pressure dressing should be reapplied. Delay in treatment may lead to skin flap necrosis. Also, the collected fluid may become a culture medium, increasing the risk of infection. Undetected hematomas can lead to fibrosis, skin puckering, and discoloration. In cases of prolonged fibrosis, serial injections of triamcinolone acetonide can be beneficial.

Skin Flap Necrosis

Skin flap necrosis is more common in patients with longer and thinner flaps. The most common areas of skin flap compromise are in the postauricular and preauricular skin. These sites represent the most distal segments of the flap, under increased tension, and with the weakest blood supply. Because of the limited nature of the mini-lift, the chance of skin flap compromise is decreased.

Additional predisposing factors to flap necrosis include large hematomas and smoking. Risk of flap necrosis is increased 12.6 times in smokers,²² and patients need to be counseled about the need to refrain from smoking 2 weeks before and after their surgery.

Patients with compromised vascular supply first present with venous congestion and flap discoloration. An eschar will form indicating necrosis. Management is conservative to allow the area to heal by secondary intention. Daily wound cleaning, limited debridement, and application of antibiotic ointment is instituted. The affected area will heal nicely by secondary intention.

Nerve Damage

The most commonly injured nerve in face-lift surgery is the great auricular nerve, occurring in 1 to 7% of patients.²³ If injury to the greater auricular nerve is detected intraoperatively, it should be repaired immediately to prevent

permanent hypesthesia and possible painful neuroma formation. Injury may be avoided by maintaining the correct surgical plane, external to the sternocleidomastoid muscle fascia.

Injury to motor nerves occurs in 0.53 to 2.6% of face-lift patients.²⁴ The two most commonly injured motor nerves are the marginal mandibular and temporal branches of the facial nerve. The zygomatic and buccal branches exit at the anterior end of the parotid gland and are rarely visualized during the mini-lift. The temporal branch runs along a line extending from 0.5 cm below the tragus, anterior and superior to a point 1.5 cm above the lateral aspect of the ipsilateral eyebrow, as described by Pitanguy and Ramos.²⁵ The frontal branch enters the underside of the frontalis muscle and lies superficial to the deep temporalis fascia. Dissection should proceed either in a subcutaneous plane or deep to the SMAS to prevent injury to this nerve.

The marginal mandibular nerve courses deep to the platysma and loops 1 to 3 cm below the horizontal ramus of the mandible, external to the facial vein and artery. It becomes more superficial ~2 cm lateral to the oral commissure and inserts on the deep aspect of the muscles. The nerve may be injured along the jawline; therefore, flap elevation and liposuction is performed carefully in this region. Staying in the immediate subdermal plane and dissecting using a blunt scissors with the tines in a vertical motion will help protect the nerve from injury.

Typically, injury to the facial nerve branches is not recognized at the time of surgery. If the surgeon does visualize nerve severance, then primary anastomosis should be attempted. If the injury is noted postoperatively, adequate time must be allowed for local anesthesia to dissipate. Fortunately, studies have shown that 85% of these injuries resolve with time.²⁶ Interim management of facial nerve weakness can consist of botulinum toxin type A treatment to the opposite site to provide symmetry. Patients with severe lagophthalmos due to temporal branch paralysis could benefit from tarsorrhaphy or gold weight placement in addition to conservative dry eye management with artificial tears, ointments, and nighttime eye taping. If temporal branch paralysis persists for more than 1 year, the patient should be evaluated for reconstructive options, such as brow-lifting or reanimation procedures.

Patients with history of Bell's palsy need to be counseled about the possibility of recurrence following rhytidectomy.

Cutaneous Anesthesia

Hypesthesia, or diminished skin sensation, is common following surgery. Sensation may return as early as 2 to 3 weeks postoperatively, but it may persist for several months. Certainly, if a major nerve trunk has been severed, sensation may never fully return. Other causes of hypesthesia include severance of cutaneous nerve attachments, postsurgical edema, as well as trauma. Nerve blocks can also traumatize the nerve and result in postoperative hypesthesia; however, the use of a small-gauge needle, such as 27 or higher, will minimize this possibility.

Paresthesia, or a sensation of tingling, pricking, or numbness, is also a temporary occurrence after surgery, more typically after forehead lifting.

Infection

Infection following rhytidectomy is extremely rare, affecting less than 0.2% of rhytidectomy patients.²⁷ The causative organisms are typically *Staphylococcus aureus* or *Pseudomonas* species. Treatment of cellulitis consists of appropriate antibiotics. In the event of abscess formation, incision, drainage, and wound culturing are necessary. Intravenous antibiotic therapy should be considered.

Hypertrophic Scarring

Patients need to be reminded preoperatively that once an incision is made, there will always be a scar and that normal scars can take up to 12 full months to totally mature. Some scar quality can be controlled by the surgeon through inconspicuous incision placement and meticulous wound closure. Incisions are better closed in a tension-free manner. Multi-layer closure may also help. The postauricular incision is best camouflaged by placing it on the posterior surface of the ear because of its tendency to migrate posteriorly and inferiorly.

Hypertrophic scarring is sometimes due to excessive tension of the closure but may occur in some patients no matter how well the tissues are handled or reapproximated. It may appear as early as 2 weeks postoperatively, although it usually occurs at 12 weeks. Intralesional triamcinolone acetonide injections can be beneficial during the healing process. Excision and primary closure may be attempted after 6 months.

Earlobe Distortion

Pixie ear deformity, also known as Satyr's ear or devil's ear, results from inferior pull on the earlobe by scar formation.²⁸ This can be prevented by reattaching the earlobe slightly more superior to its expected final position, using tension-free closure. Patients with a severe pixie ear deformity may benefit from a V- to Y- or Z-plasty. These procedures, however, often leave some residual scarring. We prefer to wait a year to reposition an ear lobe, allowing some skin laxity to develop so that a "tuck-up" can be performed to bring the face flap superiorly and posteriorly, thereby reducing possible closure tension.

Tragal Distortion

A misshapen tragus or loss of the pretragal concavity is a telltale sign of prior face-lift surgery. Avoiding excess tension on the tragal skin flap may help prevent postoperative distortion. In men, this complication is avoided because the incision is typically placed in a pretragal fashion to prevent hair-bearing skin from being moved onto the tragus.

Alopecia

Postoperative hair loss is usually due to follicular shock, telogen effluvium. No treatment is necessary and patients need to be reassured. On the other hand, incisional alopecia from follicular transection or excess tension at closure may be permanent. This can be prevented by beveling hairline

incisions parallel to the hair follicles and with tension-free closure. If the patient has no hair growth following 3 to 6 months postoperatively, one may consider direct excision of the area of alopecia with primary closure. Follicular unit transplants may also help camouflage the area.

Changes in Hairline

Incisions should be planned to minimize alteration of the hairline. Maintaining the preauricular hair tuft is the key to maintaining easy hairstyling and is a cornerstone for any

future tuck-up surgery. Well-designed local flaps or follicular unit transplantation can be utilized to recreate hairlines.

Submental Deformities

Cobra deformity, a hollowing in the submental region between the sternocleidomastoid muscles, is often the result of overzealous and irregular submental lipectomy or liposuction



Figure 10 A 50-year-old woman with cheek and neck laxity on her preoperative (a, c, e) evaluation. (b, d, f) Significant improvement in neck and cheek laxity is seen 3 months following mini-lift, endoscopic forehead and upper and lower blepharoplasty.

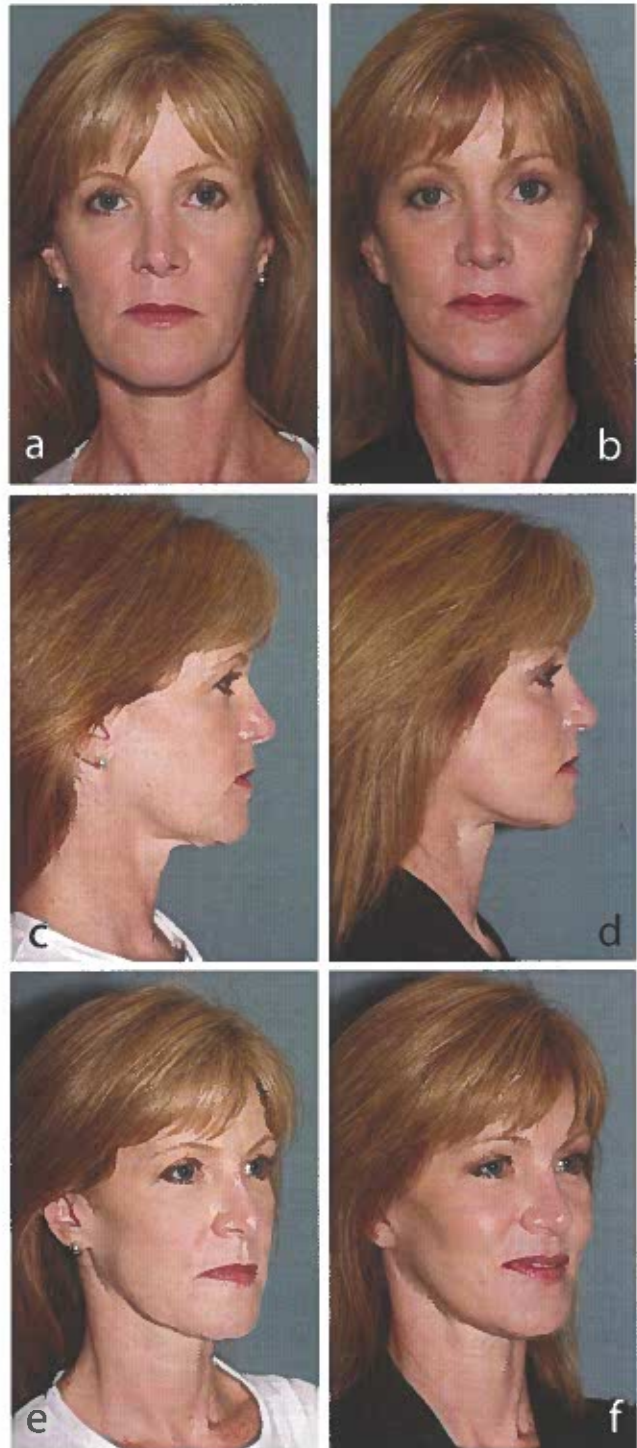


Figure 11 A 46-year-old woman with cheek and neck laxity on her preoperative (a, c, e) evaluation. (b, d, f) Significant improvement is seen in neck and cheek laxity 6 weeks following mini-lift, endoscopic forehead and bilateral malar augmentation.

and inadequate platysma plication. The liposuction port is best directed away from the undersurface of the skin.

Postauricular Irregularity

Because of the shorter nature of the postauricular mini-lift incision, there is less distance over which to spread the excess skin in the postauricular flap. This can lead to temporary bunching of postauricular skin. Fortunately, this area is easily hidden, except by patients with short hair or those who choose to wear their hair pulled back. Patients should be reassured that this will resolve with time. Resolution usually occurs within 3 to 6 months, but can take a full year.

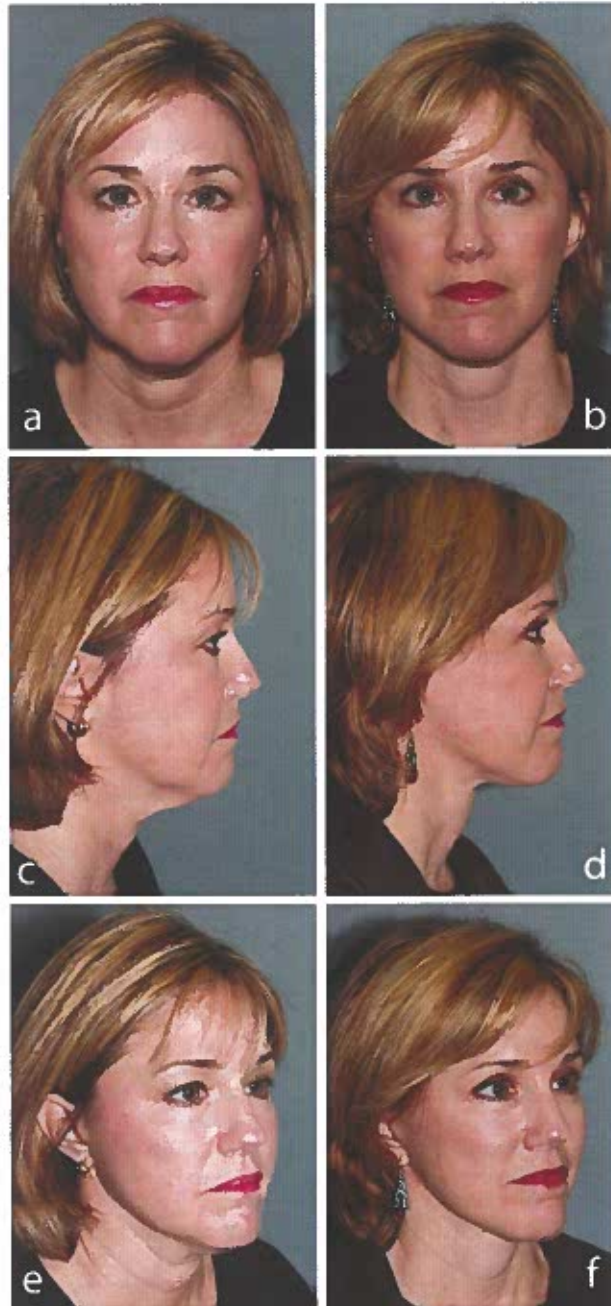


Figure 12 A 49-year-old woman with cheek and neck laxity on her preoperative (a, c, e) evaluation. (b, d, f) Significant improvement in neck and cheek laxity is seen 11 months following mini-lift and upper and lower blepharoplasty.

Occasionally, the process can be shortened with intralesional injections of triamcinolone acetonide started at 2 to 3 months if the scars are still lumpy.

Results

By definition, the limited nature of the mini-lift provides less aggressive results than a traditional rhytidectomy. The mini-

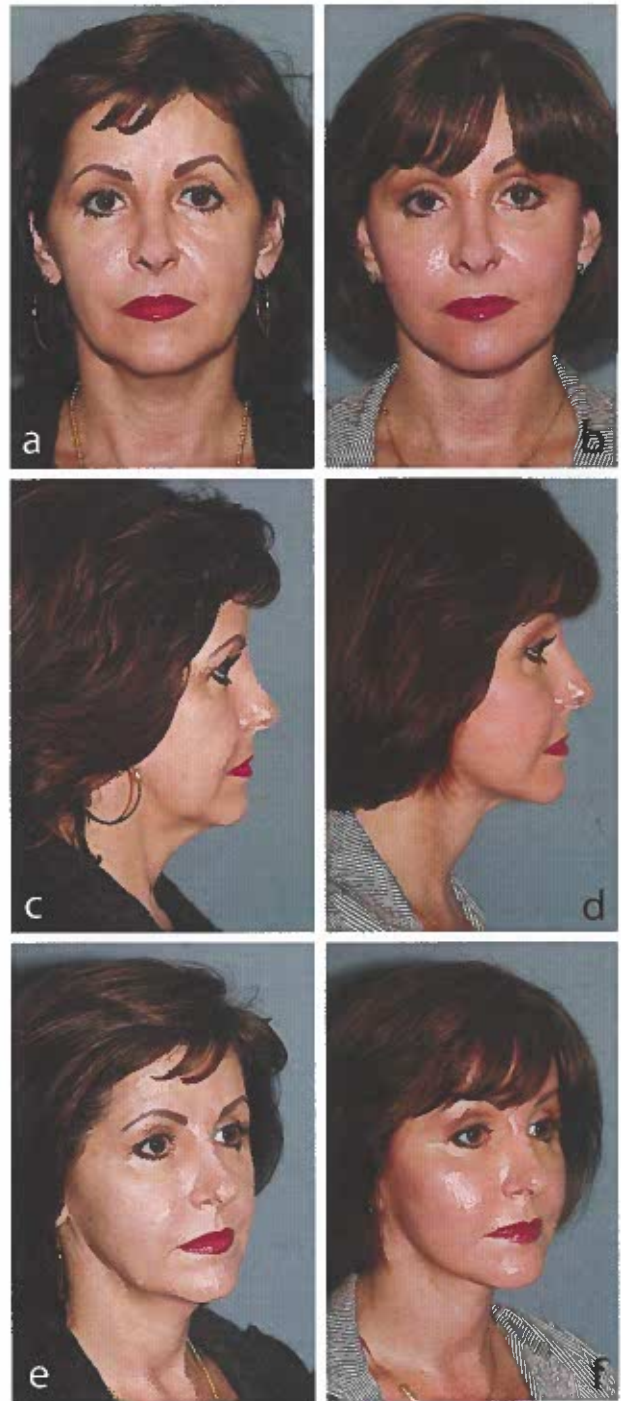


Figure 13 A 52-year-old woman with cheek, submental, and neck laxity on her preoperative (a, c, e) evaluation. (b, d, f) Significant improvement in neck and cheek laxity is seen 4 months following mini-lift, endoscopic forehead, superficial musculoaponeurotic system augmentation to upper and lower lips, and bilateral malar augmentation.

lift cannot provide as much intraoperative exposure of the posterior edge of platysma and cannot remove as much excessive neck skin as a traditional rhytidectomy. However, appropriately selected patients can obtain excellent aesthetic results while benefiting from the minimal downtime, lower cost, and rapid recovery provided by the mini-lift. Younger patients, usually under 55 years of age, with a smaller degree

of cheek and neck laxity are often excellent candidates for the mini-lift. Such patients may obtain significant improvement in the jowl line and cervicomental angle while avoiding the telltale signs of a traditional rhytidectomy through the elimination of the mastoid and occipital scars (—Figs. 10, 11, 12, 13, and 14). Because of the limited nature of the postauricular incision, there will likely be early postoperative bunching of the postauricular skin. This shortcoming is temporary and usually resolves within 3 to 6 months. Just as with the traditional SMAS rhytidectomy, the mini-lift does not address the midface and melolabial fold as well as it addresses the jowl area.

Conclusion

In today's climate of minimally invasive techniques, we are constantly searching for procedures that minimize scarring while achieving results that are comparable to more aggressive surgery. The mini-lift rhytidectomy procedure is highly effective for treating mild to moderate cheek and neck laxity while eliminating the occipital scar and minimizing down time.

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Figure 14 A 46-year-old woman with cheek, submental, and neck laxity on her preoperative (a, c, e) evaluation. (b, d, f) Significant improvement in neck and cheek laxity is seen persisting 3.5 years following mini-lift, endoscopic forehead, superficial musculoaponeurotic system augmentation to bilateral nasolabial folds, chin implant, and periorbital erbium:Yag ablative laser resurfacing.

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